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To be used
at White House
3/26/64
1600

Att. to TCS-1609-64/TH

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1. Total Cumulative KH Coverage of the USSR to Date

Board #1

This board depicts the total cumulative KH coverage of the USSR from 1960 to date. There have been thirty-seven (37) satellite missions to date providing 1,163,486 linear nautical miles and 208,223,300 square nautical miles of plottable operational coverage. Of the thirty-seven (37) satellite missions to date, nine (9) were nonstereo panoramic, nineteen (19) were KH-4 convergent stereo, three (3) were KH-4 convergent stereo carrying double film loads, five (5) were KH-7 (one of which was not usable), and one KH-6.

2. Description of KH-4 and KH-7 Systems

Board #2 "KH-4/KH-7 Photography"
(G-2649)

The KH-4 system utilizes two ~~KH-4~~ panoramic cameras, 24" F. L. mounted in a 30-degree convergent stereoscopic configuration, one looking forward and one looking aft. Operated together they provide continuous stereo coverage 126.2 miles wide at 90 nautical miles altitude. The system holds 15,600 ft. of 70 mm size film.

The "J" KH-4 system holds 2 separate film loads of 15,600 ft. 70 mm film each. One film package may be exposed and returned for readout prior to exposing the second film package.

Two S I camera subsystems are carried on each KH-4⁽⁷⁾ mission.

The KH-7 system utilizes one strip camera 77" F. L. mounted so it can roll on its longitudinal axis to either side of the ground track in increments of 0.709 degrees to a maximum of plus or minus 44° 40'. It can provide one of several modes: monoscopic strip, stereo superimposed strips, or lateral pairs of strips. A strip at the vertical will provide 10.06 nautical miles of coverage at 90 NM altitude.

The system holds 3,000 ft. of 9.460" width film. To date an SI camera subsystem has not been provided with the KH-7 missions.

3. Comparison of Results KH-4/KH-7

(Boards 3 thru 9 inclusive)

In general, the prime benefit of KH-7 photography over KH-4 photography to the PI lies in the field of order of battle information; e. g., identification may be made of tanks and a count of artillery can be made. An additional benefit is in the realm of structure identification and utilization. This identification is through component and subcomponent design and detail.

Scale and resolution now available on the KH-4 is suitable for identification of heavy and medium bomber and transport aircraft by type (e.g., Bison, Bear, Camel) under good conditions. Under optimum conditions light bombers and small transports can be identified (Beagle, Cab, Crate). It has not been possible to identify fighter or other single engine aircraft by type on KH-4 material. On KH-7 material, the PI can identify all ~~known~~ types of ~~fixed single~~ aircraft.

Board #3. Sergeevka.

This board demonstrates the PI's ability to provide field order of battle information from KH-7 material. Note the identification of field guns and howitzers.

Board #4. Ukrania

This is from a high quality KH-4 mission (9054), and demonstrates the PI's ability to identify heavy and medium aircraft on quality KH-4 material.

Board #5. Spaask Dalny

This is from a KH-7 mission (4002), and demonstrates the PI's ability to identify the smaller type aircraft on quality KH-7 material.

Board #6. Pao-Tou

This comparison board between U-2, KH-4, KH-7 demonstrates the number of times enlargement required to achieve the same relative image size.

Board #7. Sunnyvale

This is a quality board from the last KH-7 mission, and gives an example of spurious resolution (i.e., lines on tennis court.)

Board #8. Rome.

This is a quality board from the latest KH-7 mission.

Board #9. Yemen

This is a quality board from the latest KH-7 mission and demonstrates the PI's ability to identify such items as helicopters and vehicles from quality KH-7 material.

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Board 10 PI COMPARATIVE BOARD